News and Features

Scientists develop vaccine strategy for peanut allergy

Scott Gottlieb, *New York*

Researchers believe that they may be close to developing a new strategy to combat anaphylactic allergies—such as the increasingly common allergy to peanuts—by inducing tolerance using an oral formulation containing a gene from the offending allergen.

Many established allergies have been traditionally treated by immunotherapy, in which subcutaneous injections of progressively increasing doses of purified allergen are given—a strategy effective in only some circumstances. Dr. Kam Leong, professor of biomedical engineering at the Johns Hopkins School of Medicine in Baltimore, and his colleagues are developing a new strategy to induce allergen tolerance. A gene from the main allergen, in this case peanuts, is cloned into a synthetic vector and administered orally (*Nature Medicine* 1999; 5:380, 387-91).

AP photo/Kathy Willens

Peanut butter sandwiches can kill

The new strategy is based on protecting the allergen's DNA from digestion by forming a complex with particles of chitosan, a naturally occurring polysaccharide that is an effective vector for the controlled intestinal delivery of many pharmaceutical agents. After ingestion, the polysaccharide adheres to the intestinal walls and can be taken in by cells of the gastrointestinal tract. In the latest study, DNA from peanut allergens was administered orally to mice. The severity of anaphylaxis was blunted considerably when the mice subsequently underwent a protocol for sensitization and induction of anaphylaxis using the peanut allergen.

The findings are still a long way from being used in clinical applications. For example, the authors have not yet studied the efficacy of gene administration in mice that are not already sensitized to a particular allergen, which is likely to be the case in humans who would require treatment. "The immune system of mice is also quite different from that of man," said Dr. Leong.

Endostatin may reduce atherosclerosis

Scott Gottlieb, *New York*

An experimental drug known as endostatin, being developed for its ability to shrink cancerous tumors by inhibiting the growth of new blood vessels, is also showing promise in treating atherosclerosis. New research raises the possibility that a new category of drugs—called "angiogenesis inhibitors"—may be useful weapons against heart disease (*Circulation* 1999; 99:1726-32). The researchers found that endostatin significantly reduced atherosclerosis in genetically susceptible mice. In a 16-week experiment on 73 mice, the researchers tested endostatin as well as TNP-470, another substance known to inhibit the growth of capillaries in animals fed a high-cholesterol diet. The mice all had a genetic mutation that made them prone to atherosclerosis. Animals who had been treated with one of the two drugs had 70% to 85% less plaque deposition in their aortas than those untreated. The inhibitors had much less effect if given too early (before the plaques reached substantial size and needed new blood vessels to grow further) or too late (after the plaques were mature).

Endostatin, developed at Harvard University, has been shown to be effective against cancer in animals but has not yet been tested in people. The latest research project was led by Dr. Karen Moulton, a cardiologist, and conducted in the laboratory of Dr. Judah Folkman at Harvard Medical School and at Children's Hospital in Boston. Dr. Folkman pioneered the concept of angiogenesis—the growth of new blood vessels—as a potential target for cancer treatments.

Endostatin is a naturally occurring protein that blocks the formation of blood vessels. Without a blood supply, tumors in animals stop growing and sometimes regress completely. Atherosclerotic heart disease also involves unwanted tissue growth. "By blocking this, perhaps we can alter the progression of the disease," said Dr. Moulton. In addition, cutting off the blood supply to a plaque may reduce the likelihood that the plaque will eventually rupture. Dr. Moulton pointed out, however, that further research is needed to determine whether treatment with angiogenesis inhibitors in people at high risk of heart disease can affect the development of large atherosclerotic deposits.

Ethnic Albanian doctor abducted from her home in Kosovo

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Benjamin Hope, *London*

A prominent pediatrician of ethnic Albanian origin was abducted from her apartment in Pristina, Kosovo, according to Amnesty International. Dr. Flora Brovina, one of the few high-profile ethnic Albanians to remain in Pristina, was forced into a car by a group of men, some of them reportedly wearing masks, on April 22. Her brother-in-law, in contact with Amnesty International, had heard no news of her at the time of going to press. Dr. Brovina, 48, was president of the Albanian Women's League, a non-party political organization, and had been involved with local human rights groups and humanitarian work. Last year she had also been active in organizing demonstrations by women to protest against the activities of the Serbian security forces in Drenica. "There are fears that Dr. Brovina may have been targeted because of her activities, which included setting up a rehabilitation center for displaced women and children," said a spokesperson for Amnesty International.